

REMARKS/ARGUMENTS

Claims 1-21 are pending in this application.

Claims 1-6, 8-18, 20, and 21 had been rejected under 35 U.S.C. §102(b) over Schultze (US Patent No. 4,561,947). This rejection is respectfully traversed for the following reasons.

It is well established that a claim is anticipated under 35 U.S.C. §102, only if each and every element of the claim is found in a single prior art reference.¹ Moreover, to anticipate a claim under 35 U.S.C. §102, a single source must contain each and every element of the claim “arranged as in the claim.”^{2, 3} Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference.⁴ If each and every element of a claim is not found in a single reference, there can be no anticipation.

Applicants’ invention relates to a method for the recovery of a non-ferrous, rare or precious metal. The method employs an oxygen-containing oxidant in the presence of a reducing agent having donor-acceptor properties to form reaction products, e.g., radicals that participate in the recovery. For example, the reaction products can oxidize or can form complexes with the metal, thereby extracting it.

In contrast, Schultze is directed to the hydrometallurgical recovery of noble metals with thiourea. The problem addressed by Schultze is that of rapid thiourea consumption due to its oxidation by ferric salts often present in the ore, and atmospheric oxygen. See, e.g., col. 1, lines 37-40 and col. 2, lines 51-54.

¹ Verdegaa Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987).

² Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

³ Lewmar Marine Inc. v. Barient, Inc., 827 F.2d 744, 747, 3 U.S.P.Q. 2d 1766, 1768 (Fed. Cir. 1987), cert. denied, 484 U.S. 1007 (1988).

⁴ Titanium Metals Corp. v. Banner, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

To address the rapid consumption of thiourea, Schultze teaches the use of a reduction agent, preferably sulfur dioxide. See, e.g., col. 2, lines 1-59 of Schultze. At col. 5, lines 1-2, Schultze also states that “[t]he reduction agent is to be added in an amount such that only the oxidised thiourea is reformed.”

Schultze does not specify the nature of oxidized thiourea; it is reasonable to believe, however, that thiourea is oxidized to formamidine disulfide. See, e.g., U.S. Patent No. 4,816,235, issued to Pesic on March 28, 1989, at col. 8, lines 19-20, and U.S. Patent No. 5,260,040, issued to Kenna on November 9, 1993, at col. 1, lines 39-49.

Neither thiourea, nor its oxidized form, most likely formamidine disulfide, is oxygen-containing, as opposed to the oxidant used in the present invention.

Claim 1 comprises the element of treating the ore with an oxygen-containing oxidant. This element is not taught or suggested in Schultze. Therefore, Claim 1 is patentable over Schultze under 35 U.S.C. §102(b) and should be allowed.

The above-presented argument also supports patentability of Claims 2-6, 8-18, 20, and 21. Allowance of the referenced Claims is respectfully solicited.

Claims 7 and 19 had been rejected under 35 U.S.C. §103(a) over Schultze. This rejection is respectfully traversed for the following reasons.

For an obviousness rejection to be proper, the Patent Office must meet the burden of establishing a prima facie case of obviousness. The Patent Office must meet the burden of establishing that all elements of the invention are disclosed in the cited publications, which must have a suggestion, teaching or motivation for one of ordinary skill in the art to modify a reference or combined references.⁵ The cited publications should explicitly provide a reasonable expectation of success, determined from the position of one of ordinary skill in the art at the time the invention was made.⁶

⁵ In re Lee, 277 F.3d 1338, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).

⁶ In re Fine, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); Amgen v. Chugai Pharmaceuticals Co., 18 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Claim 7 comprises the element of treating the ore with an oxygen-containing oxidant. As explained hereinabove, this element is not taught or suggested in Schultze. Therefore, Claim 7 is patentable and nonobvious over Schultze under 35 U.S.C. §103(a) and should be allowed.

The above-presented argument also supports patentability of Claim 19. Allowance of the referenced Claim is respectfully solicited.

It is believed that the present application is in condition for allowance. A Notice of Allowance is respectfully solicited in this case. Should any questions arise, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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Date: November 14, 2007